MICRO CASE 75--- VZV zoster

A **55-year old woman** presented to her family physician with a 3-day history of **burning and pain over her left forearm**. The symptoms were rather abrupt in onset, and she had not experienced anything like this before. Over the previous 2 days, **several vesicles had developed in a band like distribution on her arm,** and new ones were erupting daily. On the day she went to see her family physician, the lesions had started turning purplish. At no time did she have fever, but her appetite was markedly reduced.

She had previously been healthy except for childhood illness of measles, chickenpox and mumps. The patient worked as a caregiver to elderly individuals. She had **no known allergies**.

* PHYSICAL EXAMINATION
  + Numerous **vesicle**s measuring **2-3 mm with a hemorrhagic base**. 1 or 2 vesicles had crusted over
* DIAGNOSTIC WORK UP
  + **Tzanck smear** of the base of the lesion
  + Direct fluorescent Antibody (DFA)
  + Cultivation of virus from skin lesions and other body sites
* DIFFERENTIAL
  + Contact dermatitis, Enteroviral rash, HSV-1. Herpes zoster, measles, rubella, varicella (chickenpox)
  + Note that LOCALIZED rashes are not commonly seen with viral illnesses and therefore should prompt search for an allergic or local reaction.
  + Zoster, however, can cause localized rashes.
* MICROBIOLOGICAL PROPERTIES
  + Refresher: VZV is a herpesvirus and therefore dsDNA genome. Has a single serotype. Cultivable in tissue culture. Has a characteristic appearance of **eosinophilic intranuclear inclusions and multinucleated giant cells**. Latency can occur.
* EPIDEMIOLOGY
  + Big thing is that all stages of lesions can be found at any time (unlike smallpox)
  + Chickenpox
    - Humans are only reservoir
    - Chickenpox occurs most frequently in late winter and early spring
    - Transmission via respiratory droplets
  + Zoster
    - Most commonly occurs in individuals above 50 years old
* PATHOGENESIS
  + VZV primarily infects the mucosa of upper respiratory tract and spreads via the blood to the skin, where the typical vesicular rash occurs
  + May become dormant in dorsal root ganglia (explains band pattern for zoster 🡪 the passage of the virus progresses down axon to mucocutaneous sites; local spread and replication to form clusters of blister like lesions)
  + In complicated reactivation in immunocompromised patients, there may be **hematogenous spread** of the virus to the lung, causing **interstitial pneumonia** and to the CNS, causing **encephaliti**s. These complications can also occur in immunocompetent adults
  + Primary varicella is the 2nd most common viral antecedent for **Reyes syndrome** after influenza B in children.